

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A ~~data product that can be read into a computer or a~~ map data processing apparatus, comprising:
a recording medium drive unit that reads out map data from a recording medium that ~~and~~ contains the map data that includes map-related information related to a map; and
a processing unit that executes map data processing based upon the map data read out by the recording medium drive unit, wherein:
the map data ~~comprising:~~ includes a structure achieved by dividing the map into a plurality of mesh-like subdivisions and dividing the map-related information into units corresponding to the individual subdivisions; and a structure in which the map-related information is managed in units of subdivision sets each containing a plurality of adjacent subdivisions and the map-related information is used in the map data processing apparatus in units of the individual subdivision sets;
the subdivision sets are each constituted with a core portion having at least one subdivision that does not overlap with another subdivision set and an

overlap portion having at least one subdivision that is part of a core portion of another subdivision set;

the map-related information is route-related information related to routes on the map used for route calculation;

intersection points of road are designated as nodes;

the route-related information comprises sets of subject node information each corresponding to one of a plurality of nodes present on each road and sets of adjacent node information corresponding to nodes connecting with individual subject nodes;

the route-related information corresponding to the core portion comprises the subject node information and the adjacent node information; and

the route-related information corresponding to the overlap portion is generated by eliminating the adjacent node information corresponding to specific nodes from the route-related information corresponding to the core portion.

2-3. (Canceled).

4. (Currently Amended) A ~~data-product~~ map data processing apparatus according to claim 1, wherein:

the map-related information corresponding to each of the subdivision sets is continuously recorded on a recording medium as a single block of information.

5. (Currently Amended) A ~~data product~~ map data processing apparatus according to claim 1, wherein:

the map-related information adopts a structure that allows the map-related information to be used in the map data processing apparatus also in units of the individual subdivisions.

6. (Currently Amended) A ~~data product~~ map data processing apparatus according to claim 1, ~~wherein: the map data further comprising:~~

the map data further comprises a structure that contains management information used to manage the map-related information in units of the subdivision sets; ~~and wherein:~~

the processing unit updates the map-related information obtained by the ~~map data processing apparatus can be updated~~ recording medium drive unit in units of the subdivision sets by using the management information.

7-13. (Canceled).

14. (Currently Amended) A ~~data product that can be read into a computer or a~~ map data processing apparatus, comprising:

a recording medium drive unit that reads out map data from a recording medium that ~~and~~ contains the map data that includes map-related information related to a map; ~~and~~

a processing unit that executes map data processing based upon the map data read out by the recording medium drive unit, wherein:

the map data ~~comprising:~~ includes a structure in which the map-related information is provided at a plurality of levels each corresponding to one of various scaling factors; a structure achieved by dividing the map into a plurality of mesh-like subdivisions and dividing the map-related information divided into units corresponding to the individual subdivisions, at each level; a structure in which the map-related information is managed in units of subdivision sets each containing a plurality of adjacent subdivisions and the map-related information is used in the map data processing apparatus in units of the individual subdivision sets; and a structure in which management tables containing information used to manage the subdivision sets at the individual levels are provided, ~~wherein:~~

the management tables contain information used in an arithmetic operation executed to determine correspondence between subdivision sets at different levels;

intersection points of roads on the map are designated as nodes;

the map-related information contains information related to the nodes;

the map-related information divided in correspondence to each subdivision unit further contains different level node correspondence information indicating correspondence between nodes in the subdivision and corresponding nodes at another level; and

the processing unit executes map data processing by ascertaining the correspondence between nodes at different levels based upon correspondence between the subdivision set and a subdivision set at the other level and the different level node correspondence information for subdivisions constituting the subdivision set.

15. (Currently amended) A ~~data-product~~ map data processing apparatus according to claim 14, wherein:

the management tables each contain information indicating a position of a reference subdivision representing a given subdivision set in combination with information related to a quantity of subdivisions contained in the subdivision set along a vertical direction and information related to a quantity of subdivisions contained in the subdivision set along the horizontal direction.

16. (Currently amended) A ~~data-product~~ map data processing apparatus according to claim 15, wherein:

the subdivision set has a rectangular shape; and

the reference subdivision representing the subdivision set is a subdivision located at a lower left position in the subdivision set.

17. (Currently amended) A ~~data-product~~ map data processing apparatus according to claim 16, wherein:

sets of the information used to manage the subdivision sets are stored sequentially in an order corresponding to a positional arrangement of reference subdivisions representing the individual subdivision sets in reference to the horizontal direction and the vertical direction along which the map is divided.

18. (Currently Amended) A ~~data-product~~ map data processing apparatus according to claim 14, wherein:

the map is divided into a plurality of mesh-like blocks at each of the levels;
the plurality of subdivisions are subdivisions obtained by further dividing each of the blocks into smaller partitions; and
the management tables are provided each in correspondence to one of the blocks.

19. (Currently Amended) A ~~data-product~~ map data processing apparatus according to claim 14, wherein:

the processing unit updates the map-related information obtained by the ~~map data processing apparatus can be updated~~ recording medium drive unit in units of the individual subdivision sets by using the management tables.

20-25. (Canceled).

26. (New) A map data processing apparatus according to claim 1,
wherein:

the core portion has a rectangular shape; and
the overlap portion is adjacent to the core portion.

27. (New) A map data processing apparatus, comprising:
a recording medium drive unit that reads out map data from a recording
medium that contains the map data that includes map-related information
related to a map; and

a processing unit that executes map data processing based upon the map
data read out by the recording medium drive unit, wherein:

the map data includes a structure achieved by dividing the map into a
plurality of mesh-like subdivisions and dividing the map-related information into
units corresponding to the individual subdivisions, and a structure in which the
map-related information is managed in units of subdivision sets each containing
a plurality of adjacent subdivisions and the map-related information is used in
the map data processing apparatus in units of the individual subdivision sets;

the subdivision sets are each constituted with a core portion having a
plurality of subdivisions that do not overlap with another subdivision set and an
overlap portion having at least one subdivision that is part of a core portion of
another subdivision set;

the map data further comprises a structure that contains management information used to manage the map-related information in units of the subdivision sets;

the management information includes information related to a position of a specific subdivision of a core portion, information related to a number of subdivisions set along a latitudinal direction and a longitudinal direction in a core portion, information related to a position of a specific subdivision of a subdivision set, and information related to a number of subdivisions set along a latitudinal direction and a longitudinal direction in a subdivision set;

the map-related information corresponding to each of the subdivision sets is continuously recorded on the recording medium as a single block of information;

the recording medium drive unit continuously reads out the map-related information in units of the subdivision sets from the recording medium by using the management information; and

the processing unit executes map data processing based upon the map-related information read out in units of the subdivision sets from the recording medium by the recording medium drive unit.